



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/572,953

02/21/2007

Dietmar Birgel

BIRG3005/FJD

4797

23364 7590 04/07/2009

BACON & THOMAS, PLLC
625 SLATERS LANE
FOURTH FLOOR
ALEXANDRIA, VA 22314-1176

EXAMINER

CHAMBERS, TRAVIS SLOAN

ART UNIT

PAPER NUMBER

2833

MAIL DATE

DELIVERY MODE

04/07/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/572,953	Applicant(s) BIRGEL ET AL.	
	Examiner TRAVIS CHAMBERS	Art Unit 2833	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 January 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 50-52 is/are pending in the application.
- 4a) Of the above claim(s) 30-43, 53-55 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 50-52 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 50 and 52 are rejected under 35 U.S.C. 102(b) as being anticipated by Belke, Jr. et al. (US 6585903 B1).

In reference to claim 50, Belke teaches a method for manufacturing a circuit board having at least one connection bore for receiving a connection wire, or pin, of an electronic component of a predetermined wire, or pin, diameter, comprising the steps of: manufacturing a circuit board (210 ; figure 12) with at least one ply, or layer; drilling a blind hole (212 ; figure 12) with a drilling tool having a desired diameter, into the circuit board (210) at a location desired for the connection bore; and drilling through the floor of the blind hole (212) with a drilling tool having a diameter smaller than the wire, or pin, diameter, in order to form a second bore (218 ;figure 12), so that a narrowing created thereby in the cross section of a part of the connection bore forms a holding mechanism (opening space created by 218 ; figure 12) for secure holding of the connection wire, or pin.

Art Unit: 2833

In particular reference to the recitation "for secure holding", this is seen to be for the intended use of the claimed structure and are given little patentable weight. Further, the recitation is not seen to claim any structure that prevents the reference from being used for the same purpose as the intended use recitations of the claim.

In reference to claim 52, Belke teaches a method for manufacturing a circuit board having at least one connection bore for receiving a connection wire, or pin, of an electronic component of a predetermined wire, or pin, diameter, comprising the steps of: manufacturing a circuit board (150 ; figure 9) with at least one ply, or layer; drilling a first blind hole (152 ;figure 9), at a location desired for the connection bore (154 ;figure 9), into the circuit board (150) from a first surface of the circuit board (150) with a drilling tool of a desired diameter; and drilling a second blind bore (A; image below) from a second surface (bottom surface of 150) of the circuit board (150), into the circuit board (150) a second, which is arranged essentially axially parallel and aligned with the first blind hole (152) and which meets the first blind hole (152) but does not extend completely into it, so that, in a portion of the connection bore (154), where the two blind holes (154 and A) meet one another, a restriction is formed, which represents a holding mechanism (near lead line 156 ; figure 9) for secure holding of the connection wire, or pin.

In particular reference to the recitation "for secure holding", this is seen to be for the intended use of the claimed structure and are given little patentable weight. Further, the recitation is not seen to claim any structure that prevents the reference from being used for the same purpose as the intended use recitations of the claim.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 51 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kokubun et al. (6523257 B1) in view of Machida (4185378).

In reference to claim 51, Kokubun teaches a method for manufacturing a circuit board having at least one connection bore for receiving a connection wire, or pin, of an electronic component of a predetermined wire, or pin, diameter, comprising the steps of: manufacturing a circuit board (herein embodiment of figure 1) with at least one ply, or layer; a first blind hole (upper portion of 6; figure 1) at a location desired for the connection bore (6 ; figure 1), into the circuit board from a first surface (top surface of embodiment of figure 1) of the circuit board; and a second blind hole (bottom portion of 6 ; figure 1) from a second surface (bottom surface of embodiment of figure 1) of the circuit board, into the circuit board, which is arranged slightly offset from the first blind hole (upper portion of 6; figure 1) and which meets the first blind hole (upper portion of 6; figure 1), so that, by the offset of the two blind holes (upper and lower portion of 6 ; figure 1) relative to one another, a restriction is formed, which represents a holding mechanism for secure holding of the connection wire, or pin.

However Kokubun does not teach using a drilling tool of a desired diameter.

Machida teaches using a drilling tool (B ; figure 6a) of a desired diameter.

Therefore one of ordinary skilled in the art would have been motivated to use the teachings of Machida because it better facilitates creating a desired shaped hole by allowing better control of the depth the drill penetrates the circuit board.

In particular reference to the recitation "for secure", this is seen to be for the intended use of the claimed structure and are given little patentable weight. Further, the recitation is not seen to claim any structure that prevents the reference from being used for the same purpose as the intended use recitations of the claim.

Response to Arguments

-- In response to applicant's argument (page 7, line 7-18) concerning "...One can understand this position if the reference to a wire or pin claim 50 is ignored. However it should not be ignored..." , examiner disagrees. Applicant did not positively claim the connection wire or pin. Therefore the aperture of Belke, Jr. et al. would be able to be a holding mechanism for secure holding of the connection wire or pin as intended by the claim.

-- In response to applicant's argument (page 8, lines 10-12) concerning "...circuit board according to pending claim 51 may even consist of a single layer.", examiner disagrees. The language in claim 51 states ".... a circuit board with at least one ply, or layer.." and it is seen to be claiming one or more layers, with one being the least number of layers required. Kokubun et al. (US 6523257 B1) is seen to meet the claim language.

Art Unit: 2833

-- In response to applicant's argument (page 8, lines 12-14) concerning "...Kokubun et al. only describe 'through holes' in the layers to form the final 'stepped' through hole... ", examiner disagrees. Holes 2A and 5A are formed from their respective ends. When the holes are formed they are offset from each other to make the stepped through hole.

-- In response to applicant's argument (page 8, lines 14-17) concerning "...Kokubun et al has nothing to do with holding or securing connection pins or wires....", examiner disagrees. Applicant did not positively claim the connection wire or pin. Therefore the hole of Kokubun et al. would be able to be a holding mechanism for secure holding of the connection wire or pin as intended by the claim.

Conclusion

Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Art Unit: 2833

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Travis Chambers whose telephone number is 571-272-6813. The examiner can normally be reached on Monday-Friday 8am - 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Renee Luebke can be reached on 571-272-2009. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Travis Chambers
TC
3/30/2009

/Tho D. Ta/

Primary Examiner, Art Unit 2833